

MARKED-UP VERSION OF AMENDMENTS

Claims 1, 8, 17, 22, 32 and 34 have been amended as follows:

1. (Amended) A polarizer formed by dyeing, crosslinking, stretching and drying a hydrophilic polymer film, wherein, when the polarizer is heated at 80°C for 30 minutes, the polarizer thereafter has a shrinkage force of at most 4.0 N/cm in an absorption axis direction ~~after being heated at 80°C for 30 minutes~~.

8. (Amended) A polarizing plate comprising
a polarizer having, wherein, when the polarizer is heated at 80°C for 30 minutes, the polarizer thereafter has a shrinkage force of at most 4.0 N/cm in an absorption axis direction ~~after being heated at 80°C for 30 minutes~~; and

a protective film laminated on at least one surface of the polarizer, wherein the polarizing plate satisfies a relationship of $0.01 \leq A/B \leq 0.16$ where A denotes a thickness of the polarizer and B denotes a thickness of the protective film.

17. (Amended) The polarizing plate according to claim 8 further comprising, at least one optical layer selected from a reflector, a transreflector, a retardation plate, a λ lambda plate, a viewing angle compensating film, and a brightness-enhanced brightness enhancement film.

22. (Amended) A polarizer having, wherein, when the polarizer is heated at 80°C for 30 minutes, the polarizer thereafter has a shrinkage force of at most 4.0 N/cm in an absorption axis direction ~~after being heated at 80°C for 30 minutes~~.

32. (Amended) The polarizing plate according to claim 17, wherein the optical layer is a λ lambda plate.

34. (Amended) The polarizing plate according to claim 17, wherein the optical layer is a brightness-enhanced brightness enhancement plate.

New claims 36-47 have been added.

REMARKS

By the present amendment, claims 1, 8, 17, 22, 32 and 34 have been amended and new claims 36-43 have been added. Support for the new claims is found in the original application, in particular on page 5, lines 21-26 (claims 36, 40-42 and 46-47) and on page 4, lines 12-17 (claims 37-39 and 43-45).

Claims 1-18 and 21-47 are pending in the present application. Independent claims 1 and 22 are directed to a polarizer. Independent claim 8 is directed to a polarizing plate. Claims 2-18 and 21 are dependent directly or indirectly on claim 1, and claims 23-35 are dependent directly or indirectly on claim 8. Claims 36-41 are directed to a method for preparing a polarizer and claims 42-47 are directed to a polarizer.

As a preliminary, in the Office Action, claims 17, 30, 32 and 34 are rejected under 35 U.S.C. 112, second paragraph, as indefinite. The Examiner alleges that the symbol “ λ ” should be replaced by a generic term and that the terms “brightness-enhanced” and “transflector” are undefined relative terms.

Reconsideration and withdrawal of the rejection is respectfully requested. The symbol “ λ ” has been replaced by “lambda” in claims 17 and 32, and the term “brightness-enhanced” has been replaced by “brightness enhancement” in claim 34. It is submitted that these terms are conventional in the art. In particular, a “lambda” plate is a term in the art to designate a type of retardation plate in connection with wavelength, such as quarterwave or half-wave plate, as described on page 8, lines 12-13 of the specification. Also, the term “brightness enhancement” is clear, even though it is a

relative term, because it conventionally means that light is processed so as to improve the brightness of transmitted light, which can be measured conveniently by conventional scientific methods.

Further, the objection to the term "transflector" in claim 32 is respectfully traversed. It is submitted that the term "transflector" means conventionally that a portion of light is transmitted and a portion of light is reflected, which property can be scientifically observed and measured.

In view of the above, it is submitted that the rejection should be withdrawn.

Next, in the Office Action, claims 1, 5, 7-9, 12-15, 18, 22, 28 and 35 are rejected under 35 U.S.C. 102(b) as anticipated by US 5,914,073 to Kobayashi et al. (Kobayashi). It is alleged in the Office Action that (i) the claims are of the product-by-process type, so that the process recited in the claims is not a limitation of the claims, and (ii) the recited property is inherent in the film of Kobayashi.

Reconsideration and withdrawal of the rejections is respectfully requested.

As a preliminary, it is submitted that the shrinking force recited in present claims 1, 8 and 22 is not a process limitation as apparently misconstrued in the Office Action. Thus, the heating step recited in claims 1, 8 and 22 is not a process step for making the polarizer, but a pre-measurement step which is performed so as to measure the shrinking force of the polarizer in conditions corresponding to actual use in a heating environment. This point has been clarified by amending claims 1, 8 and 22 to recite "when the polarizer is heated at 80°C for 30 minutes..."

Turning now to Kobayashi, this reference does not concern primarily a polarizing film, but a protective film applied to a polarizing film. This is apparent in particular at col. 3, lines 8-14 and Fig. 1(b) and the following paragraphs which discuss exclusively the transparent resin film (protective

film). In particular, the polarizing films are only discussed generally at col. 22, lines 24-29 of Kobayashi, while Examples 1 to 7 relate to the protective film, not the polarizer. Also, the thickness ranges described at col. 3, lines 34-35 of Kobayashi relate to the protective film, not to the polarizing film, while the thickness ranges described at col. 4, line 51 of Kobayashi is for the hardened coating layer. In summary, the only polarizers disclosed in Kobayashi are prior art polarizing films which do not meet the shrinking force feature of the present claims.

The high shrinking force of the prior art polarizing films is generally related to their large thickness. Polarizing plates are conventionally prepared industrially by dyeing, crosslinking, stretching and drying a hydrophilic polymer, e.g., PVA film. The thus obtained polarizing films usually maintain stress generated at the time of stretching. Therefore, when an external force such as heating or humidifying is applied to the polarizing film, the polarizing film cannot withstand the residual stress and generates a shrinkage force.

Specifically, the thicker the film before stretching, the more stress is applied to the film by elongation, and the higher the shrinking force of the stretched film when heating is applied. Accordingly, conventional prior art polarizers have a high shrinking force.

Kobayashi fails to teach or suggest another type of polarizer than the prior art polarizers discussed above and in the introduction to the present specification. Therefore, the present claims are not obvious over Kobayashi.

In view of the above, it is submitted that the rejection should be withdrawn.

Next, in the Office Action, claims 1-18 and 21-35 are rejected under 35 U.S.C. 103(a) as obvious over US 6,361,838 to Miyatake et al. (Miyatake) in view of Kobayashi and US 6,065,457

to Aminaka (Aminaka). It is alleged that Miyatake teaches a stretched PVA film used in a multilayer structure, and considers that the backlight of Miyatake is equivalent to a "brightness-enhanced" material and an optical layer that reflects or scatters light is synonymous to a "transflector". It is also alleged that Miyatake discloses a thickness range of 1 to 500 microns and Kobayashi discloses that the thickness is selected according to the polymer used.

Reconsideration and withdrawal of the rejection is respectfully requested. Miyatake concerns an optical film which is applied to a polarizer plate, as is apparent in particular from the passage at col. 9, lines 8-23, as well as the method for forming the optical film at col. 2, line 64 to col. 3, line 6 of Miyatake, which cannot apparently result in a polarizer as in the presently claimed invention. Thus, Miyatake fails to provide any teaching or suggestion relevant to polarizers having low shrinking force.

In this respect, it is submitted that the term "brightness enhancement film" does not relate to a backlight. A backlight emits light and can be used as a light source for, e.g., a display panel. In contrast, a brightness enhancement film receives incident light and enhances the brightness of a display panel. Also, as discussed above, the term "transflector" is not synonymous with an optical layer that reflects or scatters light.

In addition, Kobayashi fails to provide any teaching or suggestion regarding the thickness of polarizers, as discussed above (the thickness ranges indicated are for the protective layer), and Aminaka fails to remedy the deficiencies of Miyatake and Kobayashi. As a result, the present claims are not obvious in view of the cited combination of references.

In view of the above, it is submitted that the rejection should be withdrawn.

In conclusion, the invention as presently claimed is patentable. It is believed that the claims are in allowable condition and a notice to that effect is earnestly requested.

In the event there is, in the Examiner's opinion, any outstanding issue and such issue may be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants hereby petition for an appropriate extension of the response period. Please charge the fee for such extension and any other fees which may be required to our Deposit Account No. 01-2340.

Respectfully submitted,

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